Scott. II-27—40,006—27-10-52.

(195) Department.

SERIES.

G.O. No. 24

824.

Dated 26-8-49.

[Despatch Abstract.]

AGRICULTURE - Indian A Council of Agricultural Research - Scheme for Research on the control of Striga attack on Sorghum - Sanctioned

INDIAN COUNCIL OF AGRICULTURAL RESEARCH,
'P' Block, Raisina Road, New Delhi,
No.F.45(15)/49-A., the 18th May, 1949.

From

T.S. Krishnamurti Esq.,
Secretary.

To

The Secretary to the Government of Madras,
Development Department, MADRAS.

SUBJECT:- Scheme for a research on the control of Striga attack on Sorghum Madras, New Scheme.

Sir,

In continuation of this office telegram No.D.297/49-A., dated the 5th February, 1949, I am directed to say that the Governing Body of the Council at its meeting in January 1949 sanctioned the scheme for 5 years. In accordance with the revised budgetary procedure funds have been allotted for three years only in the first instance. Funds for the remaining period will be allotted in due course. The Scheme has been approved by the Regional Committee also.

I am now to convey sanction to the scheme for a period of 3 years from the 1st April, 1949 at a cost of Rs. 26,970/- (Rs. Twantysix thousand, nine hundred and seventy only) to the Council (as per statement enclosed) on the terms and conditions mentioned in the schedule attached herewith. If the grant is acceptable to the Government of Madras, a detailed technical programme of work for the full period of the scheme may be submitted for the approval of the Council by the 31st July, 1949, together with a statement showing the actual amount (with details) required for expenditure during 1949-1950. Information regarding the date of starting and the headquarters of the scheme may be intimated to this office in due course.

A copy of the general instructions regarding the planning and interpretation of manurial experiments which the Indian Council of Agricultural Research desire to be observed in respect of all schemes financed by it and (ii) the recommendations of the Crops and Soils Wing of the Board of Agriculture and Animal Husbandry in India relating to the study of the root development in different soils is also enclosed for information and necessary action.

Provision for dearness allowance, leave salary and Provident Fund Contribution has been tentatively made in the sanctioned expenditure. These will, however, be allowed to the personnel employed in the scheme in accordance with the relevant rules.

I am to request that the Officer-in-charge of the scheme may be instructed to write up his reports as the scheme progresses so that the completion of the final report may synchronise with the termination of the scheme.

Yours faithfully,
Sd/- x x x x x
Secretary.

DETAILS OF COST.

Items of expenditure	Cost for 3 years.
A. Recurring	
1. One Assistant Millet Specialist (Rs.230-30/2-260-40/2-500-50/2-700)	8,640
2. Four Upper Subordinate Assistants (Rs.100-5-140-EB-10-220)	15,120

A. Recurring	Cost for 3 years.
3. Four Fieldmen (Rs.45-2-55-1-60)	6,768
4. Two Peons (Rs.16-½-25)	1,188
5. Provident Fund contribution	1,908
6. Leave salary	2,829
7. Dearness allowance	9,888
8. Travelling allowance	3,500
9. Office expenses stationery, etc. at 700 p.a.	2,100
10. Chemicals, Preservatives etc. at 400 p.a.	1,200
11. Working expenses.	800
	53,941

or round Rs. 53,940/-

B. Non-Recurring (to be entirely borne by the Provincial Government.)

Purchase of dead-stock, seed receptacles etc.	1,500
	55,440

Share of I.C.A.R. 50% of 'A' i.e. 26,970.

Share of the Provincial Government of 'A' plus 'B' i.e. 28,470

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SCHEDULE OF TERMS TO BE OBSERVED IN CONNECTION WITH THE SCHEME

for research on the control of striga attack on Sorghum
Madras New Scheme

(i) The grant will not be regarded as a subvention towards the normal work of the Provincial Agricultural Department but will be exclusively utilised for the scheme mentioned above.

(ii) An annual progress report and a summary report with such number of copies as may be required by the Council concerning the work done during each year will be submitted to the Council in accordance with the instructions issued from time to time.

(iii) The expenditure incurred from the grant will be audited by Accountant-General, Government of Madras, who will furnish the Secretary, Indian Council of Agricultural Research, New Delhi, by the 23rd December each year with a certificate that he had done so and that the grant has been spent on the objects for which it was made, any unspent balance being refunded to the Council on the termination of the scheme.

(iv) The financial assistance rendered by the Council will be acknowledged in any published account of the work for which the grant is given.

(v) The Council will have a right to publish the results of the investigations now to be undertaken in its own journals before they are published elsewhere

(vi) The equipment and apparatus, if any, purchased out of the grant given by the Council will be the property of the Council and that such items as are non-perishable will be returned to the Council on the termination of the scheme.

(vii) The share of the Council in receipts, if any, realised from the working of the scheme will be credited to the funds of the Council at the end of each year.

(viii) The approval of the Council will be taken if a higher pay than the initial pay of the sanctioned scale is granted to any of the staff included in the scheme.

(ix) Recruitment to all posts under the scheme will be made in accordance with the rules of the Provincial Government applicable to posts of similar status under them in accordance with the Procedure laid down in the Councils Circular letter No. F.37 (31)/40.G dated the 6th November 1941. If recruitment is to be effected through the M.P.S.C it is presumed that the Madras Government will have no objection to an officer of the Council being present at the time of interview if so agreed to by the Madras Public Service Commission.

(x) If any person already in the Service of the Provincial Government is transferred for employment under the scheme, only the net cost incurred by the Provincial Government on account of the substitute or substitutes in the chain of arrangements made in that connection and not the actual pay of the person transferred to the scheme will be debited to the scheme.

(xi) The Government of Madras will consult the Council before making any change in the arrangements for the supervision of the scheme or in approved technical programme.

(xii) The Provincial Government agree that they will take suitable steps to carry such of the results of this research into practice as are of practical value to the farmers.

*(xiii) A nucleus of pure Seed/Stock will be maintained at the Station where work will be carried out.

* For Breeding Schemes only

(xiv) The Scheme shall be started as early as possible and in any case with in a year from the date of effect of sanction, otherwise the funds collected for it are likely to be resumed.

GENERAL INSTRUCTIONS REGARDING THE PLANNING AND INTERPRETATION OF MANURIAL EXPERIMENTS.

Extract from the Recommendations of the Fertiliser's Committee, 1st Meeting, 193-0.

The Committee agreed to the following general principles which in its opinion should govern the planning of such experiments:

(i) Statistical assistance wherever possible should be obtained in the planning and a layout of a series of experiments.

(ii) Manurial Experiments should be laid down in such a manner as to be capable of statistical interpretation at any time in the future.

(iii) Attention should be concentrated on a certain number of definite problems, for example, the most effective nitrogen and phosphate ratio.

(iv) Attention should be paid to disease and insect incidence.

(v) while the experiment was in progress, the services of a man who had special knowledge of the crop under experimental should be available to watch it.

(vi) Careful observation should be made of the effect of manures on plant growth; this would involve the preparation of plant development curves.

Extracts From the Proceedings of the First meeting of crops and Soils Wing of the Board of Agriculture and Animal Husbandry in India.

2.(a) The root systems of cultivated plants in relation to soils, and,

(b) the effect of Hydrogen ion concentration on the development of the root system of certain crops.

These two items were considered together. The committee recognize desirability of the more detailed study of root development

and

in different soils, recommend that the Imperial Council of Agricultural Research ~~a~~ incorporate in all the crops schemes that they now assist or in future initiate, a study of the root developments of the particular crops.

In this way a large volumes of date will be steadily accumulated on this important subject.

GOVERNMENT OF MADRAS
Abstract

AGRICULTURE - Indian Council of Agricultural Research - Scheme for Research on the Control of striga attack on Sorghum - Sanctioned.
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FOOD (K) DEPARTMENT

G.O.Ms.No. 824. Dated the 25th August 1949.
Read the following:-

Letter Ms.No. 4010, Development d/ 9.8.47 to the Indian Council of Agricultural Research.
Letter No. 79314 AII/48-3 Development dated 15.10.1948.
From the Indian Council of Agricultural Research No.F.45. 15/47 A dated 18.5.1949,.

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ORDER:-.

6 In August 1947 this Government forwarded to the Indian Council of Agricultural Research a Scheme of Research for the control of striga on Sorghum in this Province. The scheme was proposed to be run for a period of 5 years at the Agricultural Research Stations Guntur, Nandyal, Hagari and at the Millet Breeding Station at Coimbatore. The Indian Council of Agricultural Research in their letter read above have communicated their approval to the scheme for a period of 3 years and sanctioned a grant of Rs. 26,970 (Twnty six thousand and nine hundred and seventy) towards their share of the expenditure. His Excellency the Governor of Madras accepts the grant and sanctions the scheme at a cost not exceeding Rs. 53,940 (Rupees Fifty three thousand nine hundred and forty) as detailed in the Annexure to this order.

2. Sanction is accorded to the employment of the following staff for a period of 3 years from the date of appointment.

(i) One Assistant Millet Specialist on Rs. 230-700 p.m.
(ii) Four Upper Subordinates on Rs. 100-220 p.m.
(iii) Four Fieldmen on Rs. 45-60 p.m.
(iv) One Clerk on Rs. 45-90 p.m.
(v) Two peons on Rs. 18-25 p.m.

3. The expenditure on the scheme should be debited to '40. Agriculture-g- Agriculturmal experiments and Research.'

4. A copy of the letter of the Indian Council of Agricultural Research read above is communicated to the Director of Agriculture. He is requested to submit a detailed technical programme of work for the full period of the scheme together with a statement showing the actual amount (with details) required for expenditure on the scheme during 1949-1950. The Director of ~~Agreitul~~ Agriculture is also requested to report the date of starting the scheme in due course.

Sd/- M.A. Kuttalalingam pillai.
25.8.49.

To
The Director of Agriculture.
The Accountant-General through Finance.
The Indian Council of Agricultural Research, New Delhi.

Annexure.

Details of Cost.	Cost for 3 years. Rs.
A. Recurring.	
One Assistant Millet Specialist.	8,640
Four Upper Subordinates	15,120
Four Fieldmen	6,768
One Clerk.	1,728

A. Recurring.	Cost for 3 years. Rs.
Two Peons.	1,188
Provident Fund Contribution.	1,908
Leave Salary	2,829
Dearness Allowance.	10,680
Travelling allowance.	3,500
Office Expenses, Stationery etc.	2,100
Chemicals Preservations etc.	1,200
Working expenses.	800
Total.	56,461
Less Pay and allowances of Clerk.	2,520
To be shared equally by Indian Council of Agricultural Research and Madras Government.	53,941 or 53,940 roundly.

B. Non-recurring expenditure (to be borne entirely by Provincial Government.)

	Rs. 1,500
Share of Indian Council of Agricultural Research.	Rs.26,970

Share of Madras Government (Rs. 26,970 plus 1,500 plus Rs. 2,520)

.. Rs. 30,990.

. . . . .

(F.A.) Department

MEMORANDUM NO. 40253K/49-2 Dated 13.10.49.

SUB: Agriculture - Indian Council of Agricultural Research - Scheme for Research on the control of striga attack on Sorghum-

G.O.Ms.No. 824, F & A, dated 26.8.49. Erratum Issued.

REF: G.O.Ms.No. 824, F & A, dated 26.8.1949.
From the Director of Agriculture Ref.Roc.No.D.1. 790/48, dated 10.9.1949.

For the works and figures -Rs. 53,940 (Rupees Fifty three thousand nine hundred and forty) occuring in para 1 of the G.O. cited the following shall be substituted:-

Rs. 57,960 (Rupees Fifty seven thousand nine hundred and sixty).

Sd/- x x x x x
6.10.49.

To
The Director of Agriculture.
The Accountant-General through Finance.
The Indian Council of Agricultural Research.

SP/23.11. /True Copy/

Food and Agriculture Departm.

LETTER NO. 40253-K/49-5 dated 26-10-1949.

To

The Secretary,
Indian Council of Agricultural Research, New Delhi.

Sub: Agriculture - Indian Council of Agricultural Research-Scheme for control of striga on sorghum-

Ref: Your letter No. 459(15)/47-A dated 15.10.49.

-oOo-

I am directed to state that the Director of Agriculture Madras has reported that one of the Assistants appointed under the scheme joined duty on 21.9.1949. The scheme may therefore be deemed to have been started from the date on which the Assistant Joined duty (i.e.) 21.9.1949 afternoon. The Director of Agriculture Madras has also reported that the Millet Specialist will guide the Assistants in the scheme till the Assistant Millet Specialist to be in charge of the schme is appointed,. I am to add that the detailed technical programme of the scheme and particulars about the amount required for expenditure during 1949-1950 are still awaited from the Director of Agriculture Madras and these will be forwarded to the Council on receipt. The Director of Agriculture has been reminded in the matter.

Sd/-x x x x x x
25.10.49.

Copy to Director of Agriculture (He is requested to expedite his reply to Govt. M.N. 40253 R/49-4. Dated 13.10.49.

AGRICULTURE DEPARTMENT

From	To
Sri R.M. Sundaram, I.C.S.,	The Secretary to Government,
Director of Agriculture,	Food and Agriculture Department,
Chepauk, Madras-5.	Madras.

X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@X@

No.D.1. 796/49-dated 25th November 1949.

Sub: Agriculture-Indian Council of Agricultural Research-Scheme for research on the control of striga attack on Sorghum-Detailed technical Programme and financial statement for 1949-1950.

Ref: Government Memo. No. 40253 K/49-4 Food and Agriculture dated 13.10.1949.

. . . .

I forward herewith 52 copies of the detailed technical programme of the scheme mentioned above. I request that fifty copies may be forwarded to the Indian Council of Agricultural Research.

2. The statement of actual amount required for expenditure during 1949-1950 is also enclosed herewith.

Sd/-x x M. Kantiraj,
for Director of Agriculture

Forward/By Order

Sd/-x x x x x x
Gazetted Assistant,.

SP/30.11. /True Copy/

SCHEME OF RESEARCH ON THE CONTROL OF STRIGA MADRAS.

TECHNICAL PROGRAMME.

1. Evolution of strains of Sorghum resistant to Striga by selection and hybridisation:-

a) Selection:- Different varieties of cholam (Sorghum) growing in the tract will be tested in striga sick plots to find out whether there are any varieties or individual plants which are naturally resistant to striga.

b) Hybridisation: Resistant varieties like Bongamhilo, Bilichigan etc. will be used as parent material for crossing with local types to evolve striga resistant types for cultivation in areas in which striga is endemic. These areas will be delimited by detailed servey and the varieties normally grown in those areas will be used as parents. The resistant types that will be evolved will be tried only in areas which are chronically infested with Striga. or any strains that have so far been successfully used for cultivation in more areas

2. Control of Striga by Agricultural method:-

a) Trap-cropping: Trap-cropping will be tried with a view to find out how many such trap crops are necessary to exterminate or control striga. The area under this experimemt will be heavily infected with striga seeds. In this striga sick field strap-cropping with the most susceptible varietyies will be made. The trap crop will be sown twice or thrice in the year, and each crop will be removed before the striga flowers in the field.

b) Deep ploughing:- The black soils of Bellary and Kurnool are not regularly deep ploughed. It is likely that this is one of the reasons why striga has got a hold on the soil without being dislodged. Deep ploughing, ploughing to a depth of nearly one foot, in summer every year will be tried to expose the soil thoroughly to the heat of the sun. In half the number of the plots cholam will be sown every case will be taken to hand-weed these plots so that no striga will be allowed to set seed and add to the infectio In the remaining plots cotton will be sown after deep ploughing and cholam will follow it next year without deep ploughing, In this case also the cholam crops will be weeded carefully so that further infection is not added to the plot. In this set of plots there will be deep ploughing once in alternate years i.e. before the cotton crop. The efficacy of these two sub-treatments i.e. ploughing every year and ploughing in alternate years will be tested.

c) Weeding:- This will be tried in the striga sick plots where rigorous hand weeding as and when necessary will be practised with a view not to allow the striga plants, plants to set seeds till the cholam crop is harvested. The stubbles will be removed immediately after the harvest. To reduce the cost involved in hand weeding implemen will be worked between the lines of cholam as frequently as necessary and hand weeding will be confined to the rows of plants only. Successive crops will be grown. The usefulness and the economic of this treatment for the eradication of striga will be studied.

3) Control of Striga by chemical methods:-

a) Treat of the soil:- The object of the experiment is to kill the striga seeds in the soil and germinating striga plants in the soil by physical contact with certain chemicals applied to the soil Blacked lime and gypsum will be tried and their effect on the striga will be noted. Different doses of soil disinfectants will be tried to determine the effective dose.

b) Chemical sprays and dusts. A large number of chemicals are now being advertised for the control of weeds and parasites, like 2-4-D, Methoxone etc. The effect of chemicals on the striga plants appearing in the crops and the number of sprayings or dustings necessary to exterminate the striga during the crop period will be noted. In addition to this, the residual effects of the spraying if any, will be studied in the following crop. The economics of the treatments will also be worked out. p.t.o.

Venue of the work: There will be 4 centres of work at Guntur, Nandyal, Hagari and Coimbatore, in the existing Farms which will provide the necessary land for the work. The object of the distribution of work in 4 centres is to evolve suitable strains for each centre.

Coimbatore,
Dated,25-11-49.

Sd/-x P. Krishna Rao
Millet Specialist.

/True Copy/

R. Thiagarajan 8.12.53
Office Assistant,
Madras Record Office.

SP/2.12.

3.12 3/12/53